GENETICS

A PERIODICAL RECORD OF INVESTIGATIONS
BEARING ON HEREDITY AND VARIATION

Founded in 1916
by
GEORGE H. SHULL
with the cooperation of

WILLIAM E. CASTLE
EDWIN G. CONKLIN
CHARLES B. DAVENPORT
BRADLEY M. DAVIS
EDWARD M. EAST
ROLLINS A. EMERSON
HERBERT S. JENNINGS
THOMAS H. MORGAN
RAYMOND PEARL

VOLUME 86, MAY–AUGUST, 1977

GENETICS VOLUME 86, MAY–AUGUST, 1977

EDITORIAL BOARD

GEORGE LEFEVRE, *Editor*
California State University at Northridge

ROBERT W. ALLARD (1978)
University of California at Davis

SALLY LYMAN ALLEN (1982)
University of Michigan

WYATT W. ANDERSON (1981)
University of Georgia

DOROTHEA BENNETT (1981)
Memorial Sloan-Kettering Cancer Center

ARTHUR CHOVNICK (1982)
University of Connecticut

IRVING P. CRAWFORD (1979)
Scripps Clinic & Research Foundation

PETER R. DAY (1980)
Connecticut Agricultural Exper. Station

JOHN W. DRAKE (1980)
University of Illinois, Urbana

HARRISON ECHOLS (1979)
University of California at Berkeley

ROCHELLE E. ESPOSITO (1978)
University of Chicago

WARREN J. EWENS (1979)
University of Pennsylvania

NICHOLAS W. GILLHAM (1980)
Duke University

DANIEL L. HARTL (1982)
Purdue University

BURKE H. JUDD (1978)
University of Texas

JAMES F. KIDWELL (1981)
Brown University

JOHN R. LAUGHNAN (1980)
University of Illinois

GISELA MOSIG (1981)
Vanderbilt University

MARY LOU PARDUE (1979)
Massachusetts Institute of Technology

FRANK H. RUDDLE (1978)
Yale University

DAVID SCHLESSINGER (1982)
Washington University Medical School

FRED SHERMAN (1981)
University of Rochester

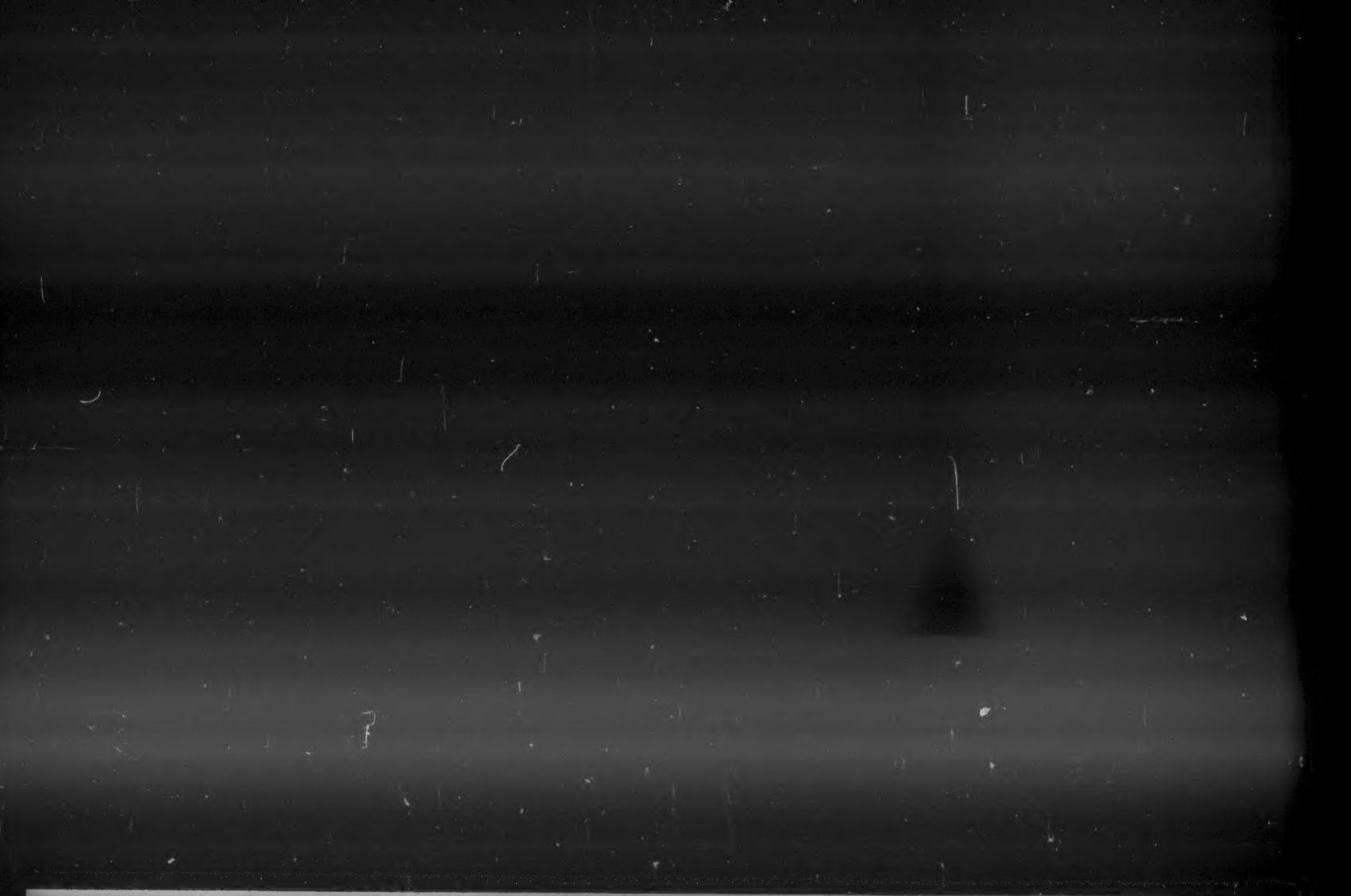
CAROLYN W. SLAYMAN (1982)
Yale University

DAVID T. SUZUKI (1979)
University of British Columbia

SHELDON WOLFF (1977)
University of California at San Francisco

Copy Editor, JACQUELINE B. TWAROG
Editorial Assistant, HEATHER A. MUNN
Business Manager, WALTER E. NEAL

PUBLISHED AT AUSTIN, TEXAS
by the Genetics Society of America
Printed at the University of Texas Printing Division, Austin



AUTHOR INDEX

to Volume 86, May–August, 1977

Adams, J., 583

Baron, A. J., 261
Belich, C., 377
Berquist, W., 5
Bock, S., 5
Brenchley, J. E., 513
Brenner, S., 275
Brett, M., 261

Carson, H. L., 187
Chakraborty, R., 455
Chang, S.-Y., 113
Chapman, A. B., 849, 861
Charlesworth, B., 213
Charlesworth, D., 213
Charnas, L., 745
Chevalet, C., 697
Clark, S. H., 789, 801
Cogley, T., 765
Culbertson, M. R., 745

Dev, V. G., 389
Drake, J. W., 501

Ely, B., 25

Falk, D. R., 765
Feuerbach-Mravlag, H., 835
Filippi, G., 199
Fincham, J. R. S., 261
Fink, G. R., 745
Fitch, W. M., 623
Funanage, V. L., 513
Fuerst, P. A., 455

Ganetzky, B., 321
Gianola, D., 849, 861
Giesel, J., 679
Gillois, M., 697
Gottlieb, L. D., 289

Habashima, S., 535
Hartl, D. L., 687
Hirschberg, J., 57
Hodgkin, J. A., 275

Ito, K., 447

Johnson, M. T., 745
Johnson, O. A., 377
Johnson, R. C., 25
Jones, E. W., 85

Kajishima, T., 161
Kerr, W. E., 583
Kidwell, J. F., 813
Kidwell, M. G., 813
Kiefer, B. I., 789, 801
Koltin, Y., 527
Kosuda, K., 399
Krauss, M., 553
Kung, C., 113

Lachance, L. E., 377
Lande, R., 485
Lange, P., 835
Langley, C. H., 447
Lee, W. H., 657
Lelley, T., 597
Li, W.-H., 901
Livingston, D., 73
Lobo, Z., 727
Lyttle, T. W., 413

Maitra, P. K., 727
Makela, M. E., 665
Malmberg, R. L., 607
Mandel, H. C., 553
Margolin, P., 237
Mark, H. F. L., 121
McCaughin, G., 765
McKenzie, K. Q., 85
Meyer, E. B., 103
Michaelidis, A., 835
Michalka, J., 237
Miller, D. A., 389
Miller, O. J., 389
Morizot, D. C., 645
Mosig, G., 5
Mukai, T., 175

Nanney, D. L., 103
Nassar, R. F., 697
Nei, M., 455, 901
Nissani, M., 779
Nöthiger, R., 1
Nur, U., 149

O'Donnell, J., 553
Oshima, Y., 535

Palmarino, R., 199
Paulino, Z. L., 583
Pentzos-Daponte, A., 835
Portin, P., 309
Prakash, L., 33
Prakash, S., 33

Richard, R. D., 377
Richardson, R. H., 665
Rimpau, J., 597
Rinaldi, A., 199
Rippol, P., 357
Rothman, E. D., 583
Rutledge, J. J., 849, 861

Sandler, L., 567
Seale, T. W., 261
Sene, F. M., 187
Seravalli, E., 199
Siciliano, M. J., 645
Simchen, G., 57
Siniscalco, M., 199
Smouse, P., 399
Sperlich, D., 835
Sofer, W., 553
Stahl, F. W., 715
Stahl, M. M., 715
Strausbaugh, L. D., 789
Strobeck, C., 213
Sved, J. A., 813

Tantravahi, R., 389

van Houten, J., 113
Voelker, R. A., 175, 447

Watanabe, T. K., 657
Williams, W. E., 501
Wimber, D. E., 133
Wimber, D. R., 133
Wolf, G., 597
Wright, D. A., 645

Yamada, Y., 885
Yamazaki, T., 227

Zimmering, S., 121

SUBJECT INDEX

to Volume 86, May–August, 1977

acridine mutations, T4, 607
ade3, 85
alcohol dehydrogenase, 553
allozymes, 149
allozymic similarity, 187
aneuploids, wheat, 597
Apis mellifera, 583
apolipoprotein as crossover product, 623

bacteriophage T4, 5, 501, 607
behavioral mutants, 113

Caenorhabditis elegans, 275
cage populations, 657
Caulobacter crescentus, 25
cell cycle, 57
cell lethality, 357
centromere and nonrandom disjunction, 121
centromeric effect, 121
Chi recombination, 715
chromosome translocations, 377
chromosomes, mouse, 389
Clarkia, 289
color-blindness (protan), 199
color mutants, goldfish, 161
crossovers and phylogenies, 623
culling variate, 885

degeneration of useless characters, 901
2-deoxyglucose-resistant-yeast, 727
diploid males in Apis, 583
DNA, 2μm (yeast), 73
DNA binding protein, 5
DNA repair mutants, 33
DNA repair pathways, 33
DNA synthesis, 501
Drosophila, 779
Drosophila, Hawaiian, 187
Drosophila melanogaster, 121, 175, 309, 321, 357, 413, 447, 553, 567, 657, 765, 789, 801, 813
Drosophila subobscura, 835
Drosophila virilis, 133

E. coli, 399
electrophoresis, 149
electrophoretic enzyme variants, 645
electrophoretic variability, Clarkia, 289
embryonic death, 377
embryonic development, 377
EMS mutagenesis, 779
enzyme divergence, 289
epistasis, evolution of, 607
epistasis, functional, 679
extinction time, 901

Fish: platyfish and swordtails, 645
formaldehyde mutagenesis, 553
frameshift mutations, yeast, 745
fructose, growth on, 727

gene differentiation, 901
gene duplication, 289
gene duplication, apolipoprotein, 623
gene duplication, hemoglobin, 623
gene function, 161
gene *32*, function of, 5
gene mapping, ochre suppressor in *S. typhimurium*, 237
genetic lethals, 377
genetic similarity, 187
genetic variability, 455
glucose phosphorylation, 727
glutamate dehydrogenase, 261
glutamine synthetase mutants, 513
goldfish, 161
G6PD-deficiency, 199

hemoglobins as crossover products, 623
heterochromatin, gene interactions, 567
heterozygosity, 455
hexokinase, P1, P2, 727
hot spot in lambda, 715
house fly, 377
hybrid dysgenesis, 813

identity relations between relatives, 697
immaturity, phenocopy, 103
inversion polymorphism, 175
isozyme polymorphism, 175
isozymes: platyfish and swordtails, 645

lethal accumulation, 657
linkage disequilibrium, 175, 199, 227, 447, 679
linkage, enzyme loci in fish, 645
linkage, polygenic, 485

male recombination, 813
man, 199, 623
mapping function, 3-gene tetrad data, 535
maternal effect, semilethals, 567
maternal inheritance, 149
mating systems, 485
mealybug, 149
meiosis, recombination, 57
meiotic drive, population genetics of, 413
membrane mutants, 113
mitotic recombination, 357
MMS-sensitive mutants, 33
mosaic analysis, lethals, 309
mouse, 389
multilocus simulation, 227
multiple alleles, effect of, 227
mutant isolation, 25
mutation, 813
mutation, multilocus, 485
mutational mosaicism, 779
mutations, ochre suppressor in *S. typhimurium*, 237
mutator mutations, 501

Neurospora, 261
nonrandom disjunction, 121
nonsense suppressors, 261
nucleolus organizers, 389

ochre suppressors in *S. typhimurium*, 237
overdominance, 227

Paramecium, 113
"paranoiac" mutants, 113
phosphodiesterase isoenzymes, wheat, 597
phosphoglucoisomerase, 289
phylogenies, crossover constrained, 623
polygenic characters, 485
polymorphism, 901
population genetics, microorganisms, 607
population genetics, theory, 687
population size, effect of, 227
population size, effective, 175
protein polymorphism, 455
Pseudococcus obscurus, 149

queen matings, 583

rII gene, 5
Rat, 849, 861
realized selection, 885
recombination, evolution of, 607
recombination, mechanism of, 5
recombination, selection for, 213
regulatory genes, localization of, 597
relative viabilities, 835
resource partitioning, 399
ribosomal genes, 389
RNA, 5S gene sites, 133
rRNA synthesis, regulation of, 789, 801
rudimentary locus, 765

5S gene clusters, 133
Saccharomyces, 73
Saccharomyces cerevisiae, 33, 535
Salmonella typhimurium, 237, 513
seasonal variation, 447
segregation distortion, components of, 321
selection index in retrospect, 885
selection models, 399
selection, stochastic, 687
selfing populations, recombination in, 213
sex alleles, 583
sex determination, 583
sexual transformation, 275
silver stain, 389
somatic cell genetics, 357
sporulation deficient mutants, 33
sterility, 813
suppressors, frameshift, 745
suppressors, ochre in *S. typhimurium*, 237
sympatric sibling species, 665

T4 bacteriophage, 5, 501, 607
THFA metabolism, 85
tetrad data, three-gene mapping, 535
Tetrahymena, 103
three-gene analysis, 535
Triticum aestivum, 597

Ustilago killer, 527
Ustilago maydis, 527

virilis group, 5S genes, 133
virus-like particles, partial genomes, 527

Wahlund effect at two loci, 665

X-chromosome, man, 199
X irradiation, effect on body weight, 849
X irradiation, effect on genetic parameters, 861

Yeast, 57, 73, 85, 727, 745
Yeast, three-gene analysis, 535